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## Soybean seed treatments for 2002

Xiao-Bing Yang

Iowa State University, [xbyang@iastate.edu](mailto:xbyang@iastate.edu)

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# INTEGRATED CROP MANAGEMENT

## Soybean seed treatments for 2002

Iowa soybean producers are becoming more interested in using seed treatments to prevent stand reduction by soybean seedling diseases.

This article describes how and when to use seed treatment.



**Damping-off by *Pythium*/*Phytophthora*.**

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## Early planting

In a normal-weather season, early-planted soybean would grow in low-temperature, high-moisture soil, which increases seedling disease risk. If spring weather conditions are dry, seedling disease risk would be less of a concern because dry soil is not conducive for disease occurrence. However, if soybean seeds are planted in fields with high moisture, seed treatments may be needed. In fields with high moisture, disease risk may be high for early-planted soybean. Cool (<60°F) and wet soils promote fungal seed rot or seedling death caused by *Pythium* and *Fusarium*.

Although the *Phytophthora* fungus favors warm soil temperatures and has a lower infection rate in cooler soil, it does not rule out infection by this fungus in early-planted soybean. If a field had severe *Phytophthora* in past seasons, the pathogen can still cause substantial reduction in early-planted soybean because of high amounts of available inoculum in the field, which occurred for some growers in the 2001 planting season.

## New *Phytophthora* races

A recent shift in *Phytophthora* race increases the risk of *Phytophthora* damping-off. Numerous observations and field reports in the past 2 years have shown the loss of effectiveness of Rps-1k gene in managing *Phytophthora* damping-off in Iowa. Currently, plant pathologists at Iowa State University are doing a survey on *Phytophthora* races in Iowa. Our results thus far indicate that populations of races that can defeat the Rps-1k gene have increased significantly compared with 6 years ago. If you have experienced significant

*Phytophthora* disease damage on Rps-1k gene soybean, consider using seed treatments for those fields.

## Chemical treatments

Chemicals are effective in controlling some fungi and these chemicals are often specific for certain diseases. There are different formulations offered by companies. Apron XL (mefenoxam) and Allegiance (metalaxyl) are effective in controlling *Pythium* and *Phytophthora*. When either one of these two chemicals is mixed with other chemicals into a formulation such as Apron + Maxx = ApronMaxx, the formulation is used to control seedling diseases besides *Pythium* and *Phytophthora* damping-off. Other formulations on the market are Stiletto (metalaxyl, thiram, and carboxin) and Prevail (metalaxyl, PCNB, and carboxin).

ApronMaxx is a relatively new seed treatment that we tested in the past 2 years. There are two types of application forms, ApronMaxx 2EC and ApronMaxx RTA, the later can be used for on-farm seed treatments with simple equipment. For control of *Phytophthora*, consider a higher rate of Apron XL when using ApronMaxx RTA. We have observed that higher rates of Apron XL provided better control in fields where *Phytophthora* damping-off risk is great.

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[1] <http://www.ent.iastate.edu/imagegal/plantpath/soybean/dampoff/1778.33pyphydamp.html>

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